

## PATENT ABSTRACTS OF JAPAN

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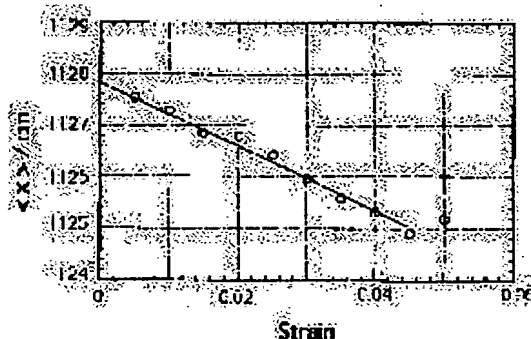
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## (54) POLYETHYLENE FIBER HAVING HIGH STRENGTH

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To solve the problems of conventional high-strength polyethylene fiber comprising the weak compression stress resistance owing to the high crystallization degree to leave concentrated defects causing the stress concentration in contrast with the advantage of high strength and high elastic modulus and to provide a high-strength polyethylene fiber having decreased number of lattice defects and molecular terminals causing the concentration of defects, reducing the size of a defect structure to molecular order and having a homogeneous structure containing the structure finely dispersed over the whole fiber structure to improve the mechanical properties.

**SOLUTION:** The high-strength polyethylene fiber has a Raman shift factor of  $\geq -2.0$  cm<sup>-1</sup>/%, a tensile strength of  $\geq 15$  cN/dtex, a Raman band broadening factor of  $\leq 1.5$  cm<sup>-1</sup>/% and a tensile modulus of  $\geq 500$  cN/dtex.



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